

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

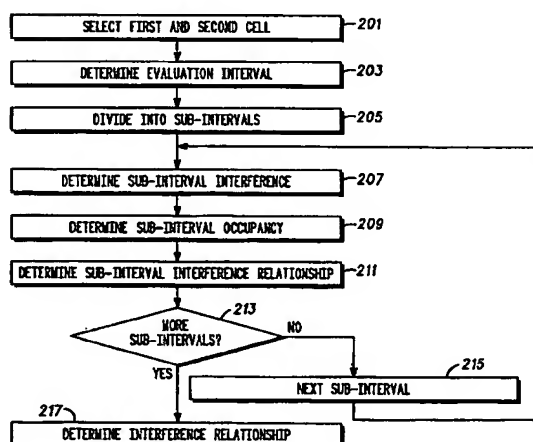


(43) International Publication Date
1 July 2004 (01.07.2004)

PCT

(10) International Publication Number
WO 2004/056145 A2

- (51) International Patent Classification⁷: **H04Q 7/36**
- (21) International Application Number:
PCT/EP2003/050950
- (22) International Filing Date: 5 December 2003 (05.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0229390.0 18 December 2002 (18.12.2002) GB
- (71) Applicant (*for all designated States except US*): **MOTOROLA INC** [US/US]; 1303 E. Algonquin Road, Schaumburg, IL 60196 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **RATFORD, Michael** [GB/GB]; Ground Floor Flat, 10 Pulteney Street, Bath, Somerset BA2 4BR (GB). **BRUSCH, Simon** [GB/GB]; 1 Sandview, Faringdon, Oxfordshire SN7 7UT (GB). **WILLIAMS, Olatunde** [GB/GB]; Flat B, Avon House, Tithe Barn Crescent, Swindon SN1 4NP (GB).
- (54) Title: **METHOD AND APPARATUS FOR DETERMINING AN INTERFERENCE RELATIONSHIP BETWEEN CELLS OF A CELLULAR COMMUNICATION SYSTEM**
- (74) Agent: **LITCHFIELD, Laura**; Motorola European Intellectual Property Operations, Midpoint, Alencon Link, Basingstoke, Hampshire RG21 7PL (GB).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— *without international search report and to be republished upon receipt of that report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



(57) Abstract: The invention relates to a system for determining an interference relationship between cells of a cellular communication system comprising at least a first cell and a second cell. A method comprises the step of dividing (205) an evaluation interval into a plurality of sub-intervals. For each sub interval, the method proceeds to determine (209) a sub-interval simultaneous occupancy related to the correlation between communication in the first and second cell. The sub-interval simultaneous occupancy is determined from an occupancy of each of the first cell and the second cell. A sub-interval potential interference is then determined (209) in response to the interference characteristics in each sub-interval. An interference relationship is subsequently determined from the sub-interval potential interferences and the sub-interval simultaneous occupancies. The interference relationship provides a measure of the impact of interference between the first and second cell suitable for frequency planning.

WO 2004/056145 A2